

REMARKS

Claims 1-30 are pending. No new matter has been added by way of the present amendment. For instance, the rejected limitation in claim 1 has been cancelled. Moreover, claim 1 has been amended to recite “wherein the image-forming layer comprises a polymer latex containing substantially no NH_4^+ .” This limitation is supported by the specification which recites at page 57, lines 31-34, “as the main binder in the layers formed on the image-forming layer side of the support, polymer latex is preferably used.” References also made to the discussion at page 34, lines 11-13 which states “the expression of “not substantially containing ammonia” used herein means that ammonia is not intentionally added to each material or each coating solution.” It is therefore explicit that the binder (in the image-forming layer) is one of the materials that intentionally does not contain ammonia. Thus, a material not containing ammonia can be identified with a material containing substantially no NH_4^+ . Further, the examples listed in Tables 1 and 2 in the present specification were prepared using a SBR latex not containing NH_4^+ as a binder in the image-forming layer. Newly added claim 23 is supported by the present specification at page 59, lines 21-26. Newly added claims 24 and 25 are supported by the present specification at page 60, lines 1-19. Newly added claim 26 is supported by the present specification at page 63, lines 10-17. Newly added claim 27 is supported by the present specification, for instance, reference is made to page 64, lines 27-32 and page 95, lines 7-28. For clarity, Applicant points out that the “carnauba wax” at page 95, line 18 is a lubricant and the “upper overcoat layer” discussed at page 95, line 7 is an outermost layer of the image-forming layer side. Newly added claim 28 is supported by the present specification at page 63, lines 10-17. In this regard the Examiner is advised of the fact that the samples prepared in the example

example section comprise three protective layers. Newly added claim 29 is supported by the present specification at page 34, lines 11-13. The Examiner is advised of the fact that the coating solutions, used for forming the image-forming layers of the examples section comprise NaOH as a pH modifier. Lastly, Newly added claim 30 is supported by the present specification at page 34, lines 11-13. Accordingly, no new matter has been added.

In view of the following remarks, Applicant respectfully requests that the Examiner withdraw all rejections and allow the currently pending claims.

Issues Under 35 U.S.C. § 112, first paragraph

The Examiner has rejected claims 1-22 under 35 U.S.C. § 112, first paragraph, written description, for the reasons recited at pages 2-4 of the outstanding Office Action. Although Applicant disagrees with the Examiner's rejection, in an effort for further prosecution, Applicant has cancelled the rejected language from the present claims. Thus, this rejection is moot. Reconsideration and withdrawal thereof are respectfully requested.

Issues Under 35 U.S.C. §102(b)/103(a)

The Examiner has rejected claims 1-16 and 18-22 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative under 35 U.S.C. § 103(a) as being obvious over JP 2000-112072 (hereinafter referred to as JP '072). The Examiner has also rejected claim 17 under 35 U.S.C. §103(a) as being obvious over JP '072 in view of Ito et al, EP 1096310 (Ito '310). Applicant respectfully traverses each of the above rejections and herein incorporates all previously submitted arguments.

Applicant respectfully submits that none of the references cited by the Examiner (JP '072 and Ito '310) suggest or disclose the subject matter of the present claims. The present claims relate to a photothermographic material which must satisfy at least one of two specific conditions, Condition I and Condition II. As discussed above, these conditions are as follows:

Condition I includes the limitation that

the NH_4^+ content in all the layers formed on the image-forming layer side of the support is 0.06 mmol/m^2 or less

Condition II includes the limitation that the

film surface pH of the image-forming layer side of the support is substantially unchanged after coating, and the layers formed on the image-forming layer side of the support do not substantially contain ammonia

Neither of Condition I or Condition II are satisfied, either expressly or inherently by the cited art. Applicant has submitted suitable evidence on this point and request that the Examiner closely investigate this evidence and the arguments relating thereto. The Examiner's attention is again directed to the previously submitted Declarations. These Declarations include (1) the Nakano Declaration submitted on November 22, 2002, (2) the Oikawa Declaration submitted on November 7, 2003 and (3) the Oikawa Declaration submitted on May 11, 2004.

The Declarative Evidence is particularly important as it reveals the lack of inherency of the present subject matter in the cited references. Without such inherent disclosure there can be no anticipation. Further, absent inherent disclosure, the lack of any motivation, such as might be provided by explicit disclosure, to arrive at Condition I or Condition II, prevents a proper *prima facie* case of obviousness from being asserted.

As explained in previous Responses, the references fail to suggest or disclose Condition I or Condition II. This is discussed below.

The references fails to disclose, either explicitly or inherently, Condition I or Condition II.

The primary reference cited by the Examiner is JP '072. In the November 7, 2003 Oikawa Declaration, three samples (Samples 1, 2, and 3) were tested. Sample 3 was prepared according to Sample 3 shown in Table 1 of JP '072.

A review of the results for Sample 3 reveals that the amounts of ammonium ion in all the layers formed on the image forming side are outside of the claimed ranges. Sample 3 contained 0.23 mmol/m² of ammonium ion in all the layers formed on the image forming layer side. However, Condition I of the present claims requires that the amount of ammonium ion in all the layers formed on the image-forming layer side of the support be 0.06 mmol/m² or less. Condition II of the claims requires that the layers formed on the image-forming layer side of the support do not substantially contain ammonia. Neither of these conditions is achieved by the cited art.

The Examiner's attention is directed to the fact that regardless of the modification of layer surface pH of the samples, the NH₄⁺ content is not affected. Once the NH₄⁺ content has been set by the LACSTAR 3370B binder, the use of acids (such as NaOH) or pH buffers may provide different counter anions, but does not alter the actual NH₄⁺ content in the samples. The Examiner is requested to carefully consider this fact in view of the lack of disclosure of Condition I or II. Further, the Examiner is asked to reconsider this in view of the fact that the present claims require an image-forming layer comprising a polymer latex containing substantially no NH₄⁺. Therefore, no photothermographic material falling within the scope of

the present claims is either suggested or disclosed by JP '072. This will be discussed further below.

Generally, a polymer latex such as LACSTAR 3370B is not soluble in a solvent of coating liquid, such as water. Therefore, any NH_4^+ within the polymer latex cannot be easily removed. If a pH modifier is added to a coating liquid containing LACSTAR 3370B in order to remove NH_4^+ in the solvent, the NH_4^+ within the polymer latex is not also removed. Such removal would require an additional step such as soaking the polymer latex in an appropriate solvent for a long period of time. Accordingly, without such additional modification, the NH_4^+ will remain in an image-forming layer for as long as LACSTAR 3307B is used as the binder.

The Examiner has asserted that Samples Nos. 12-14 described in Table 1 in paragraph [0285] of JP '072 were prepared by using NaOH as a pH buffer and their surface pH values were set to 5.2, 6.2 or 6.5. While this may be true, these conditions do not affect NH_4^+ content requirements of Conditions I or II of the present claims. This also does not affect the newly added limitation concerning the substantial lack of NH_4^+ in the image-forming layer comprising the polymer latex.

Each of Samples 12-14 of JP '072 were prepared using LACSTAR 3370B as a binder. LACSTAR 3370B contains a considerable amount of NH_4^+ as was demonstrated in the Nakano Declaration submitted on November 22, 2002. Accordingly, regardless of the type of pH modifier used or the value of the layer surface pH, as long as LACSTAR 3370B is used as a binder, the NH_4^+ content in all of the layers formed on the image-forming sides of Samples 12-14 will be determined based upon the NH_4^+ content of LACSTAR 3370B.

Further, it was demonstrated in the Oikawa Declaration submitted on November 7, 2003 that the NH_4^+ content in all of the layers formed on the image-forming sides of the samples, which were prepared using LACSTAR 3370B as a binder, was almost 0.25 mmol/m^2 . It is therefore evident that the samples described in JP '072 contain NH_4^+ in an amount much larger than 0.06 mmol/m^2 as required by Condition I. Such amounts also are greater than layers that do "not substantially contain ammonia" as required by Condition II.

The NH_4^+ content is not decided by the layer surface pH. The layer surface pH of a sample is varied depending upon types of acids or bases contained in the sample. If the layer surface pH of a sample prepared according to JP '072 (using LACSTAR 3370B as a binder) is adjusted to 5.2, 6.2 or 6.5, the NH_4^+ content is not changed. The counter anions for NH_4^+ may change, but the NH_4^+ molecules cannot be physically removed from the sample.

The fact that the NH_4^+ content is a sample prepared using LACSTAR 3370B as a binder is almost 0.25 mmol/m^2 was also shown in the latest Oikawa Declaration submitted on May 11, 2004. Sample Nos. 7-9, 12-14 and 17-19 of Example 1 of U.S. 6,100,022 were prepared using NaOH or phosphoric acid as a pH buffer and their surface pH values were set to 4.9, 5.5 or 6.2. However, since they were prepared using LACSTAR 3370B as a binder, as proven in the latest Declaration, the NH_4^+ contents of the samples were almost 0.25 mmol/m^2 .

Accordingly, as discussed above, it is evident that Sample Nos. 12-14 described in Table 1 at paragraph [0285] of JP '072 contained NH_4^+ is an amount of almost 0.25 mmol/m^2 , which is greater than the amounts required by the claims. Additionally, in the latest Oikawa Declaration submitted on May 11, 2004 it was demonstrated that samples whose NH_4^+ contents were almost

0.25 mmol/m² could not reduce the different in the line widths in the same manner as a composition falling with the scope of independent claim 1.

Accordingly, the cited references of JP '072 and Ito '310 fail to achieve the presently claimed subject matter. The references also lack any explicit disclosure of Condition I or Condition II, thus no anticipation exists. Additionally, there also exists no *prima facie* case of obviousness. Specifically, there exists no motivation in any of the references including the secondary reference of Ito '310 to achieve the presently claimed subject matter. Thus, the Examiner has failed to present a valid *prima facie* case of obviousness.

However, even if the Examiner has hypothetically established a *prima facie* case of obviousness, a point not conceded by Applicant, Applicant submits that the presently claimed subject matter achieves unexpectedly superior results compared to the cited art. For instance, in the latest Oikawa Declaration submitted on May 11, 2004 it was demonstrated that samples whose NH₄⁺ contents were almost 0.25 mmol/m² could not reduce the different in the line widths in the same manner as a composition falling with the scope of independent claim 1.

Also, as shown in the Table 1 of the present specification, the claimed invention shows much lower temperature and humidity dependency than samples No. 1-3 and No. 1-8. Applicant submits that one skilled in the art could not have expected that such excellent effects could be obtained by satisfying Condition I of the claimed invention.

Further, as shown in Table II of the present specification, the claimed invention shows much lower temperature and humidity dependency than comparative samples that do not satisfy Condition II. Applicant submits that one skilled in the art could not have expected that such excellent effects could be obtained by satisfying Condition II of claimed invention.

Accordingly, Applicant respectfully submits that the Examiner has failed to present a valid case of anticipation or *prima facie* case of obviousness. Further, even if the Examiner has hypothetically presented a *prima facie* case of obviousness, the unexpected results according to the present invention with respect to temperature and humidity dependency, rebut any hypothetical *prima facie* case of obviousness. Accordingly, the Examiner is respectfully requested to withdraw all rejections and allow the currently pending claims.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie (Reg. No. 42,874) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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